

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

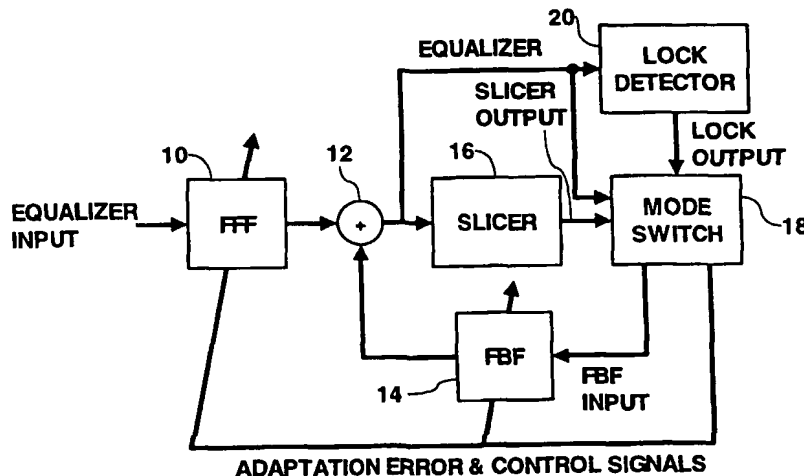
(10) International Publication Number
WO 03/090389 A1

- (51) **International Patent Classification⁷:** H04N 7/10, H03H 15/00, G06F 11/10
- (21) **International Application Number:** PCT/US03/11207
- (22) **International Filing Date:** 10 April 2003 (10.04.2003)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
60/373,205 17 April 2002 (17.04.2002) US
- (71) **Applicant (for all designated States except US):** THOMSON LICENSING S.A. [FR/FR]; 46, Quai A. Le Gallo, F-92648 Boulogne (FR).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** PARK, Jeongsoon [KR/US]; 738 Young Graduate House, West Lafayette, IN 47906 (US). HEO, Seo, Weon [KR/KR]; 127-18 Gaebong-bon-Dong, 152-090 Guro-Gu (KR). MARKMAN, Ivonete [BR/US]; 11388 Royal Court, Carmel, IN 46032 (US). GELFAND, Saul, Brian [US/US]; 70 Sugar Maple Court, Lafayette, IN 47905 (US).
- H04J 3/12, (74) **Agents:** TRIPOLI, Joseph, S. et al.; c/o Thomson Multimedia Licensing Inc., 2 Independence Way, Suite 2, Princeton, NJ 08540 (US).
- (81) **Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report

Published:
— *with international search report*

[Continued on next page]

- (54) **Title:** EQUALIZER/FORWARD ERROR CORRECTION-AUTOMATIC MODE SELECTOR



(57) Abstract: An apparatus for automatically selecting one of a standard decision directed (dd) mode and a soft dd mode in a decision feedback equalizer (DFE) for receiving a data signal includes an equalizer (30) utilizing forward error correction (FEC) for providing first and second output signals corresponding to a DFE automatic switching mode and a soft automatic switching mode, respectively, and a comparator (36) for comparing byte error rates (ByER) of the first and second output signals for selecting as a superior mode that mode associated with a lower ByER and outputting the output signal with the lower ByER. A lock detector (30) provides a lock signal derived from the DFE output signal with the lower ByER and a mode switch (38) selectively places the DFE outputs in one of the dd modes or a blind mode, depending on the lock signal.

WO 03/090389 A1